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The Veterinary Record

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Vol. 70 No. 14 Issue No. 4174 293-306

April 5th 1958

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No. 14 APRIL 5th, 1958 Vol. 70

Registered for Transmission as a Newspaper *Price 2s. post free*

Trypanosoma vivax Infection in a Mare : Treatment With Ethidium Bromide

BY

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and

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TRYPANOSOMIASIS in the horse, caused by *Trypanosoma vivax*, occurs in tsetse infested areas of Africa. Hornby (1952) reported that although he had many fly-struck equines to treat during the German East African campaign, pure *T. vivax* infections were rare, and these he recorded as being of a chronic character. Macfie (1913) in Northern Nigeria refers to it as a mild disease from which 14 out of 15 infected horses recovered. A strain from Ruanda was described by Rodhain *et al.* (1941) as having little pathogenicity for horses.

Hornby (1952) states that the clinical disease, " has an ill-defined syndrome of anaemia, low fever, inappetence, progressive weakness and emaciation, with some oedema of the sheath and 'filling' of the legs. There may be petechiae on the conjunctiva, and keratitis has been recorded. Towards the end there may be inco-ordination of movement indicative of paresis of the hind limbs."

An account is now given of the activity of ethidium bromide (2 : 7 diamino-10-ethyl-9-phenyl-phenanthridinium bromide) against *T. vivax* in the horse.

History

The subject was an aged, black-brown, Arab, mare. The animal was in good general condition, although somewhat obese. In April, 1954, she gave birth to a normal foal which died of piroplasmosis at 3 years of age. Prior to the development of trypanosomiasis the mare was stabled at night and grazed in a paddock during the day. She had not been off the veterinary station at Vom, N. Nigeria, for at least 7 years.

Vom is located in a tsetse-free area, but during the rainy season (normally from March to September) there are numerous biting Diptera, such as Stomoxys, Tabanus, and Haematopota in the area.

Clinical Examinations

May 4th, 1957.—Head, neck and chest covered with small urticarial swellings. 15 ml. Mepyramine maleate* administered intramuscularly. Temperature 99.5° F.

May 5th, 1957.—Apparent general improvement. Urticarial swellings now on hindquarters, but not on head, neck and chest. Temperature 99.4° F. Eating.

May 6th, 1957.—Dosed with 0.5 ounce laxative.† Purged normally. Temperature 99.6° F.

May 8th, 1957.—Temperature 100.0° F.

May 9th, 1957.—Temperature 104.2° F., pulse 92, respirations 42. Anorexia. Conjunctivae, gums and mucosa of vulva all icteric. Pastern joints swollen.

Giemsa stained thin blood film—heavy parasitaemia with *Trypanosoma vivax*.

Treatment for Trypanosomiasis

On May 9th, 1957, when *T. vivax* infection was confirmed, the mare was treated with 15 ml. of a 2 per cent. aqueous solution of ethidium bromide, at the rate of 1 mg. per kg. bodyweight.

The drug was injected into the gluteal muscles, one half of the total dose in each side.

* Anthisan. May & Baker.
† Altan. May & Baker.

Results

Within 24 hours of treatment the pulse returned to normal, and no trypanosomes could be found in the peripheral blood.

The respiration rate continued to be high (26 to 40 per minute) for 9 days after treatment, and then reverted to a steady 16 per minute.

The temperature fell to 101° F. on the day following treatment and continued slightly above 100° F. until the 4th day, when it was 99.8° F. On the 9th day there was a sharp rise to 103° F., but thereafter the temperature remained between 99.8° and 100.6° F.

The visible mucous membranes resumed their normal pink colour by the 4th day following treatment.

There was no swelling at the sites of injection of the ethidium bromide, but 5 days after treatment, a 1 inch thick oedematous plaque was seen over the ventral abdomen, extending from the xiphoid cartilage to the umbilicus and about 12 inches wide. Oedematous swellings also occurred in the inguinal region. Transitory swellings developed above the hocks in each leg.

Hot fomentations were applied to the swellings and all disappeared within 14 days of their appearance.

The mare has remained well, and no evidence of a relapse has been seen in the 5 months since treatment. Blood films were examined daily for 5 days after treatment, and thereafter on the 9th, 16th, 18th, 30th, 65th, 86th and 162nd days.

The results of examinations on the blood are summarised in Table I.

One hundred trypanosomes were measured using the technique employed by Fairbairn (1953). Blood films were only available for 1 day of the infection before treatment was given. The mean length of the trypanosome was 20.58μ ($\pm$ 0.194), and the distribution was normal. It was therefore somewhat shorter than most strains of *T. vivax* reported (Fairbairn, 1953).

TABLE I
BLOOD EXAMINATIONS—MARE

Examination	Days After Treatment						
	Treated	9	16	30	65	86	162
1. Red cell count 10^6 per c.mm.	6.40	6.55	6.46	7.47	8.63	7.75	8.19
2. Packed cell volume, per cent.	29	30	31	39	42	41	41
3. Haemoglobin g./100 ml. (Sahli)	11.8	11.2	11.8	13.9	15.4	15.8	16.7
4. Haemoglobin g./100 ml. (M.R.C.)	10.3	10.1	10.1	10.6	13.0	12.5	13.3
5. M.C.H.C. per cent.—Sahli	40.7	37.3	38.0	35.6	36.7	38.5	40.7
M.R.C.	35.5	33.6	32.5	27.2	31.0	30.5	32.4
6. M.C.V. c.μ.	45.3	45.8	48.0	52.3	48.6	53.0	50.0
7. S.G.—serum	1.028	1.028	1.027	1.028	1.029	1.029	1.029
8. Serum Bilirubin mg./100 ml.	10.0	1.6	0.9	3.1	4.0	0	1.6
9. Gamma globulin g./100 ml.	1.1	1.3	1.3	1.1	1.4	1.2	0.8
10. Formol gel test	—	Clear gel	—	—	—	—	—
11. Trypanosomes in peripheral blood	+	—	—	—	—	—	—

Technique :— 1. Thoma, Haemocytometer.
2. 3,000 r.p.m. for 1 hour Radius = 5.5 inches.
4. M.R.C. Grey Wedge Photometer.
7. Copper Sulphate.
8. King & Coxon (1950)
9. Kunkel (1947)
10. Aldehyde Reaction.

Discussion

Although Vom is situated in a tsetse-free area, cattle bought for experimental purposes are occasionally found to be infected with trypanosomes on arrival. They contract the infection while grazing in tsetse areas off the plateau.

The evidence suggests that the infection in the mare may have been due to mechanical transmission, by biting flies, from cattle grazed in nearby paddocks. Dogs are occasionally presented to the veterinary clinic suffering from trypanosomiasis ; but since this animal is not known to develop *T. vivax* infections it is not considered to have been a reservoir in this case.

Cattle injected intramuscularly with ethidium bromide usually develop a transient swelling of varying degrees of severity at the injection site (Stephen, 1957). In the mare no swelling of this nature developed, The oedema of the ventral abdominal wall and inguinal region was very likely due to the drug, but this was of little consequence.

The disease was treated before clinical anaemia developed, but the improvement seen in the erythrocyte count, packed cell volume and haemoglobin seems to indicate that the animal was developing an anaemia due to trypanosomiasis at the time of treatment.

Discoloration of the visible mucous membranes did not occur when the bilirubin was 4.0 mg. per 100 ml. serum or less, but was very marked at 10.0 mg. per 100 ml. serum.

Acknowledgments.—The writers are indebted to Dr. D. G. Godfrey, Protozoology Section, W.A.I.T.R. Vom, for measuring the trypanosomes and for the statistical analysis of these measurements.

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Epidemiological Studies of Canine Virus Hepatitis (Rubarth's Disease)

BY

N. M. LARIN

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SUMMARY.—Canine virus hepatitis is endemic in many parts of Britain. The serological findings suggest that the majority of infections with the virus must be either symptomless (clinically inapparent) or so mild as to escape attention completely. The use of the term "symptomless" or "inapparent" infection does not suggest that the organs are not affected. In fact, our investigations of the symptomless infection show that extensive tissue lesions occur in every case. Thus the symptomless infection must be considered as a possible background complicating other canine diseases. The significance of the epidemiological findings is discussed.

Introduction

DURING the last 7 years extensive investigations have been carried out in these laboratories on the epidemiology, immunology, and pathogenetic rôle of canine hepatitis virus. The present report is concerned with a discussion of our epidemiological findings, while the other papers in this series, to be published elsewhere, will deal with some virological and immunological aspects of Rubarth's disease as well as with the disease in suckling puppies.

Apart from its intrinsic interest for the veterinary profession, canine virus hepatitis also attracts the active interest of Public Health virologists, this probably being due to recent findings concerning antigenic relationships of poliomyelitis and canine hepatitis viruses (Martin & Goret, 1953; Prier, 1956).

Geographical Distribution

It is doubtful if there is any country where canine virus hepatitis is not endemic, for evidence of this infection has been obtained wherever appropriate search has been made. Generally speaking, the disease is of the same pattern in all countries, and serological evidence obtained in these laboratories suggests that there is little difference between strains of the virus isolated in North America, Europe, Australia, or Malaya.

Foci of endemic canine virus hepatitis in Britain are shown in Fig. 1. It must be emphasised, however, that since Rubarth's disease is not notifiable, and as no organised survey on this infection has been made, data in Fig. 1 sum up only our diagnostic reports to veterinary surgeons on laboratory-confirmed cases of the disease in adult dogs. The results of examinations of the few specimens occasionally received from Scotland and Wales can give the impression that the incidence of endemic virus hepatitis is low, but information from our colleagues in the above regions leaves little doubt that endemic canine virus hepatitis is also widespread in Scotland and Wales.

Age, Sex and Breed Incidence

From our data it follows that at present canine virus hepatitis causes the acute form of disease mainly in suckling puppies and young dogs (under one year of age) of both sexes and various breeds. The older dogs are not commonly clinically affected, presumably due to previous experience with the virus.

Canine virus hepatitis tends to be a chronic and probably, in some cases, life-long infection of the dog (Larin, 1953a, b), and recurrences can sometimes be stimulated by obscure factors (Larin & Orbell, 1956). Mortality from the mild and symptomless forms of canine virus hepatitis is very low and death in such cases is usually due to the aggravation of

FIG. 1.—Foci of endemic canine virus hepatitis in England, Scotland and Wales, 1951-7.

hepatitis lesions by infections with other viruses or bacteria. On the other hand, mortality in dogs affected severely with the disease can be as high as 30 to 40 per cent. (Larin, 1953b).

According to our observations and the results of serological tests, this virus infection usually occurs in the dog very early in life, and infrequently takes the form of acute disease. When antibody occurred in the serum of young puppies, the titres were in the majority higher than in positive sera from adult dogs, this being evidence that the infection had been recently acquired by the puppies. The virus tends to persist in the infected dog throughout life as a latent (symptomless) infection giving rise to recurrent tissue lesions, this resulting in fluctuating titres of the complement fixing antibody in the blood. The sera of dogs either affected with the acute disease or in the initial stage of the symptomless (inapparent) infection showed no antibody, but the animals developed it later (Larin, 1953a).

From observations made in a number of kennels with endemic virus hepatitis, including our breeding kennels, it can reasonably be concluded that while epidemics of the disease are infrequent, sporadic cases and mainly symptomless infections may occur all the year round (Fig. 2). Thus, it is quite likely

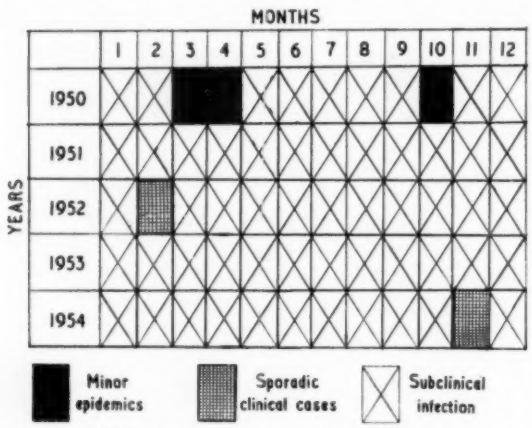

FIG. 2.—Epidemiology of canine virus hepatitis in C.R.S. breeding kennels during five years (1950-4).

that the actual number of cases of this infection in an endemic kennel remains more or less constant throughout the year, and that some factors which operate only occasionally serve to alter the susceptibility of the dog so that the infection develops into overt disease. It is quite possible that such development may be precipitated by over-exertion or by a "flare-up" of some benign local infection with bacteria, and also by a number of other hitherto obscure factors which may either alter the susceptibility of cells to virus invasion, or facilitate virus dissemination through the body.

It is also possible that, immediately prior to the development of an epidemic, the virus becomes more virulent and more widely disseminated than it has been during interepidemic periods, and thus there is a great total increase in the number of infections.

Evidence relating to the spread of the infection by "healthy" carriers is afforded by our experiments in which presumably non-immune (serologically negative) young dogs of different breeds were infected by exposing them to "healthy" dogs who showed antibody titres which were characteristic of the symptomless (inapparent) infection. Unfortunately, investigations of elimination of the virus by carriers are much handicapped by lack of a convenient laboratory animal to be used for detecting the virus.

Incidence of Canine Virus Hepatitis in Several Litters of Puppies after Weaning

It was usual to find only a single case of the disease in severe form in a litter of puppies which had been kept together after weaning. The other puppies developed the disease either in a mild or in a symptomless form (this was detected by serological examinations of the blood for antibody titres), or escaped the infection entirely and remained susceptible to the virus. In this connection it may be of interest to refer here to Table I which shows the observations we made during 5 months on 46 weaned puppies.

It can be seen from Table I that despite close

TABLE I

INCIDENCE OF CANINE VIRUS HEPATITIS IN SEVERAL LITTERS OF PUPPIES KEPT TOGETHER AFTER THE WEANING

Number of puppies in litter	Fatal cases of virus hepatitis in severe form	Mild and symptomless infections (serological data)	Serologically negative and susceptible to the virus on inoculation
7	–	4	3
5	1	2	2
8	–	6	2
7	1	5	1
4	–	4	–
6	–	4	2
6	1	2	3
3	–	2	1
Total 46	3	29	14

contact between the puppies, coupled with their natural unhygienic habits, the infection was not one that spread widely in a short time, and it was only after two to three months that some other puppies developed either mild or symptomless infections from a case of the disease in acute form. As is shown in the last column of Table I, a good proportion of puppies who were in direct contact with acute and subclinical cases of the disease remained unaffected and appeared to be non-immune to the virus on experimental inoculation.

Insect Vector

The presence of the virus in lice collected from dogs affected with the disease in its acute form has been established by experimental inoculation of susceptible (serologically negative) puppies with louse extracts. It was also established that infected lice contained the virus complement-fixing antigen, which remained active after 6 years of storage of the lice

at 3° C. It was unsettled, however, whether the infectivity and antigenic activity of louse extracts were due to the original virus particles which were present in ingested canine blood, or whether the virus proliferated in the living louse. In any case the possibility of transmission of the virus by insect vector must be considered.

Discussion

The most important problem raised by these findings is that of reconciling the serological evidence as to the great extent of the infection in endemic kennels with the records indicating a disproportionately low morbidity and mortality. It therefore seems certain that many infections must be either completely symptomless (inapparent) or so mild as to escape attention completely. The use of the term "symptomless" or "inapparent" infection may erroneously suggest that the organs are not affected. In fact, investigations of the symptomless infection (Larin & Orbell, 1956) show that extensive tissue lesions and especially liver lesions occur in every case. The age pattern of immunity suggests that the infection occurs in the dog early in life. The inadequacy of these studies makes largely speculative any attempt to explain the mechanisms involved in the widespread dissemination of hepatitis virus. In so far as this virus has been investigated, it has not been possible to discover apart from the louse any other reservoir of infection, and thus, hygienic conditions under which the dog lives and its primitive habits are probably largely responsible for dissemination of virus of faecal and urinal origin.

In the light of the above data, eradication of canine virus hepatitis with the use of general preventive measures such as quarantine is probably an unrealistic goal. Therefore, in so far as canine virus hepatitis constitutes a problem of sufficient magnitude to justify control measures, effective mass immunisation of dogs would seem preferable to an attack on unhygienic habits of the dog or the use of quarantine, and should also be much cheaper. Active immunisation against canine virus hepatitis represents, however, a formidable problem for this infection may be contracted early in life and in some cases, probably *in utero* (Larin, Skulski & Orbell, 1957). Moreover, since the majority of dogs of all ages develop the infection in the symptomless form, the difficulty in assessing the efficacy of a vaccine is obvious. Indeed, the active immunisation in canine virus hepatitis should probably be directed against *the development of lesions* rather than against infrequently occurring disease in a clinically recognisable form. A word of comment may also be directed to the usefulness of the complement-fixation test in determining the epidemiological status of kennels, the micro (plate) complement-fixation test (Smith, Orbell & Gaddum, 1955) being especially useful for screening purposes. Since the presence of virus hepatitis lesions should always be considered as a possible background complicating other canine diseases, the use of the complement-fixation test permits one to obtain the necessary information for making a prognosis.

Acknowledgments.—I am grateful to Professor W. I. B. Beveridge and Dr. F. O. MacCallum for their helpful criticism of this paper and to Mr. W. G. Orbell for able technical assistance throughout 7 years of this investigation. Grateful thanks are due to all veterinary surgeons who kindly supplied us with necessary specimens and information.

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EXAMINATION OF CANINE BLOOD*

Examination of blood can be a useful aid to the diagnosis of certain canine conditions and in this contribution the author describes the technique adopted for the routine examination of dogs' blood using a Wintrobe haemocrit and stained blood films

A sample of venous blood is collected in a dry syringe and transferred to bottles containing anticoagulant prepared according to a given formula. The blood films should be prepared from this within 20 minutes in order to prevent distortion of leucocytes but may be stained subsequently. Similarly when it is intended to determine the sedimentation rate it is essential to ensure that the haemocrit tube is filled within an hour of drawing the blood. The sedimentation rate is determined by allowing the tube to stand for an hour, after which it is centrifuged at 3,000 r.p.m. for 30 minutes in order to obtain the haemocrit readings. Examination of the tube at this stage will show that the blood has separated into three layers, the erythrocyte mass is at the bottom and may be measured as the packed cell volume or P.C.V., above this are the thrombocytes and leucocytes as a grey to white layer termed the buffy coat, while the remainder of the column consists of plasma. Since the haemocrit tube has a 100-mm. scale the component parts of the blood can be measured directly and expressed in millimetres or volume per 100 c.c.

Knowing that the mean haemoglobin content of the canine red blood cell is 33 per cent. the haemoglobin level in grammes per 100 ml. of a particular sample of blood can be estimated from the P.C.V. by dividing by 3. The interpretation of the measurements of the buffy coat is slightly more involved since there is considerable variation in the number of thrombocytes and the total leucocyte count cannot be accurately predicted. However, for practical purposes a buffy coat of less than 0.5 mm. suggests leukopenia while one above 2 mm. indicates leucocytosis. When many abnormal erythrocytes are present the lower portion of the buffy coat may be tinged red. The plasma is normally slightly yellow tinged—due to the presence of bilirubin from the breakdown of old erythrocytes. This colouring may be compared with standard solutions of potassium dichromate in order to determine the icteric index, which does not exceed 5 units in the normal dog.

The abnormal red blood cells which may be observed in stained films in association with chronic disease are described, and examples of the haemocrit readings and the blood film finding in certain specific conditions (*e.g.* pyometra, chronic interstitial nephritis with uraemia, etc.) are given.

S. W. D.

* Examination of Canine Blood by Means of the Haemocrit and Stained Blood Film. Schalm, O. W. (1957). *North. Amer. Vet.* **38**. 316-8.

A Case of Visceral Blastomycosis in the Dog

BY

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Rochester

SUMMARY.—A description is given of a fatal case resulting from infection with Blastomyces dermatitidis affecting mainly the kidneys and the liver. The case is of note for two reasons: in the first place, the condition is considered rare in this country, and secondly, without the aid of a laboratory report the diagnosis on post-mortem *examination would probably have been viral hepatitis. In addition, the origin of infection might be interesting if known, as the bitch belonged to a local practising doctor. Discussions with the local pathologist, however, indicate that no such infection has been reported in the local population. Such a case does emphasise the need for wearing protective clothing when conducting routine* post-mortem *examinations.*

INFECTION due to Blastomyces dermatiditis, a yeast-like organism, is considered not to occur in this country. This type of infection is, however, fairly common in North America and occurs in both man and dogs. Although there is no known evidence to indicate cross infection between the species as far as source and frequency are concerned, there is some degree of geographical coincidence. In America, for obvious public health reasons, euthanasia is encouraged on diagnosis which can be confirmed by a cutaneous test.* In animals there are apparently three forms: generalised, respiratory, and skeletal (Ausherman *et al.*, 1957). In man, the condition produced is called "Gilchrist's Disease."

Subject

Three-year-old Alsatian bitch.

Symptoms

Reported by owner to have gone off feed suddenly and to be reaching up white, frothy mucus. Examination showed a temperature of 102.0° F., but as the bitch was extremely nervous, it was difficult to assess if this was of significance. Although examination of membranes, glands, etc., revealed no other abnormality, a simple gastric sedative was prescribed.

Treatment

Two days later the vomiting was more acute and now included bile in the mucus. No motion had been passed, the animal was generally disinterested and would not attempt to feed or drink. Examination revealed little new information except a slight muddying of the mucous membranes and a little abdominal pain on deep palpation. Temperature was normal. The possibilities of hepatitis or a "foreign body" were raised and an injection of liver extract administered.

The following day the animal was much worse; it showed a marked loss of weight, weakness of legs, and marked loss in general condition. The temperature was 100.2° F. No motion had been passed, and although the dog had urinated, the owner had been unsuccessful in obtaining a specimen. The animal was hospitalised for detailed examination.

Normal X-ray and barium sulphate† meal plates revealed nothing except a slightly enlarged liver. Blood samples and faeces sample were taken, the latter by means of a saline enema, and submitted for laboratory report. It was not possible to obtain a urine sample. A further injection of liver extract was given and also streptomycin.

Next morning the bitch was extremely weak and although it was realised that it might be contra-indicated, 4 grammes of phenobutiodil‡ were given orally. X-rays taken 12 hours later revealed a greatly enlarged gall bladder. The bitch died 18 hours later despite further liver extract and streptomycin injections.

Post-mortem *Examination*

Post-mortem examination revealed an enlarged, dark liver, grossly enlarged and thickened gall bladder, and small, thickened kidneys. A tentative diagnosis was made of viral hepatitis with secondary kidney damage. Specimens were sent for a laboratory report.

Laboratory Report

Faeces. No parasites. Normal flora. Normal pancreatic efficiency.

Blood. R.B.C.s: 5,970,000 per cu. mm. W.B.C.s: 7,600 per cu. mm. Haemoglobin: 14.5 mg. per 100 ml. Blood urea: 145.1 mg. per 100 ml. (High) Complement-fixation test for viral hepatitis was negative.

Organs. Rapid diagnosis was possible from smears and suspensions of liver and kidneys. These showed double-contoured, round, yeast-like organisms identifiable as Blastomyces dermatitidis. Kidneys showed severe affection with chronic interstitial nephritis containing microcysts containing the causal organisms. These were especially numerous in the lumen of Bowman's capsule.

Acknowledgment.—I should like to thank C. Jackson, B.V.SC., D.SC., M.R.C.V.S., of the Canine Research Station, Newmarket, for his prompt submission of detailed laboratory reports and further information.

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* Concentrated Blastomycin: Parke, Davis.
† Fotogel: Evans Medical Supplies Ltd.
‡ Biliodyl: May & Baker Ltd.

A Heat Intolerance Syndrome in Cattle Following an Attack of Foot-and-Mouth Disease

M. Maqsood, S. M. Ishaq and M. Anwar
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Heat intolerance in cattle, with panting as a striking symptom, is observed as an after-effect of foot-and-mouth disease. This is accompanied by a marked increase in respiration and pulse rates, a rise in temperature, and a cessation of the normal shedding of the hair coat. The affected animals lose condition and show a great tendency to stand in ponds or water-troughs, indicating their inability to tolerate the environmental temperature (100° to 110° F.) in the shade which can be tolerated by unaffected animals.

FIG. 1.—Panter cow. Note the stringy discharge from the nostrils.

Minett (1949), reported the occurrence of this condition in the Indo-Pakistan sub-continent.

During 1956, a survey of this condition was made in the former Punjab province and preliminary work on the symptomatology, pathology and therapeutics of this condition was carried out at the Allah Dad Cattle-breeding Farm, District Multan, where a large number of cows were affected after an outbreak of foot-and-mouth disease. The affected animals panted throughout the day and there was mucous discharge from the nostrils (Fig. 1). The respiration rate and temperature of affected and unaffected animals are given in the adjoining Table.

The affected animals lost condition and there was a marked decline in the milk secretion and fertility rate. They did not shed their hair coats (see Fig. 2 and compare with the unaffected animal in Fig. 3).

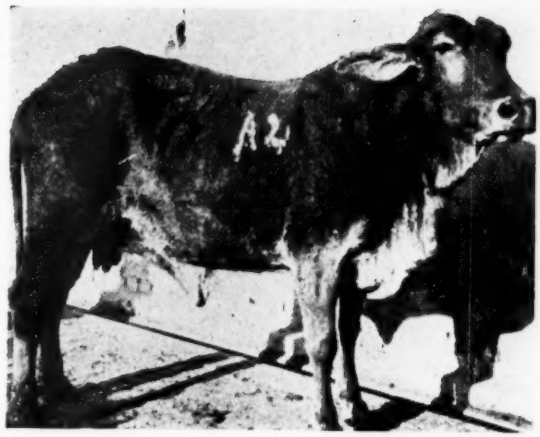

FIG. 2.—Panter cow. Note the long stairy hair-coat and arrested udder growth.

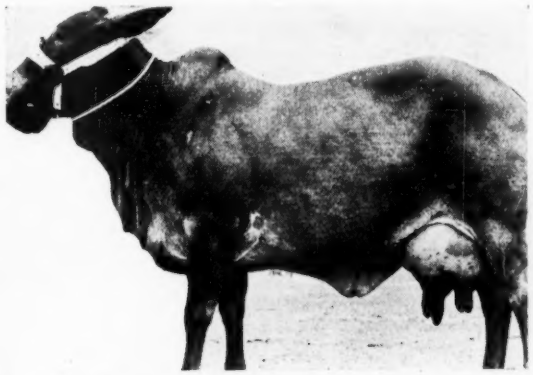

FIG. 3.—Non-panter cow. Compare the hair-coat and the udder with the panter cow Fig. 2.

On *post-mortem* examination some degree of petechial haemorrhage was seen in the meninges. Histological examination of the thyroid gland indicated an increased activity in the rate of production of the thyroid hormone. The lungs showed emphysematous changes. Other organs were normal.

There are indications that this condition, in part, is due to an increase in the rate of production of the thyroid hormone by the thyroid gland as the administration of a goitrogen* in suitable doses showed

Time	Respiration per minute ± S.D.*		Temperature ° F. ± S.D.	
	Control	Affected	Control	Affected
Morning (6 a.m.)	31 ± 1	46 ± 3	100.8 ± ·1	101 ± 0·4
Evening (5 p.m.)	36 ± 1	62 ± 8	101.8 ± 0.1	103 ± 0·8

* S.D. = Standard deviation.

* Thiouracil.

(*Concluded at foot of col. 1 overleaf*)

Current Literature

BOOK REVIEWS

Advances in Veterinary Science. Vol. III. *Editors:* C. A. BRANDLY & E. L. JUNGHERR. Academic Books, Ltd., London, 1957. Pp. xi + 579. £4 13s.

The first volume of this series was published in 1953, the second in 1955 and the third appeared towards the end of 1957. In the course of the 3 volumes a substantial part of the field of veterinary science has been covered. As yet no precise pattern of endeavour can be discerned from the contents of the 3 volumes; in part, at any rate, the contents of each volume may have been selected because of their topical interest, but in part no doubt the editors have been swayed by the availability of suitable authors. On the whole there has been a commendable absence of overlapping of subject matter as between the contents of the 3 volumes. The publication of these 3 volumes within a short span of years represents a substantial achievement on the part of the authors the editors and the publishers. That these books are a valuable contribution to veterinary literature no one will deny. It is hardly to be expected that there would not be some variation in the quality of the different contributions. In general the quality has shown improvement since the first volume that came in for some—perhaps not unmerited—criticism and there can be little doubt that the contents of volume III have attained a standard substantially higher than that of the preceding volumes.

There are 9 chapters in this volume. The first on anaesthesia—entitled Anaesthesiology—is written by L. W. Hall, of the Department of Veterinary Clinical Studies in the Cambridge Veterinary School. Dr. Hall's work on veterinary anaesthesia is already well known to members of the veterinary profession and assuredly they will look forward to reading this chapter. They will not be disappointed. The chapter is divided into 9 sections. A useful introduction is followed by sections on premedication, narcosis, relaxation and analgesia. The review of the actions of Beta-naphthoxyethanol concludes with the summation that "it is apparent the drug is rather unreliable and even dangerous." Following these sections new ground is broken by consideration of hypotensive methods, hypothermia, shock and replacement therapy. The chapter concludes with a section on the use of antidotes in anaesthesia. The chapter is fully authenticated by 7 pages of references.

The second chapter by J. R. M. Innes & L. Z. Saunders is entitled Diseases of the Central Nervous System of Domesticated Animals and Comparisons with Human Neuropathology. The subject is a big one and it is not surprising that the text extends to 135 pages and there are 29 pages of references. Even in a chapter as large as this one it cannot be expected that so immense a subject can be dealt with in any great degree of detail. The chapter is, however, a most useful guide to anyone wishing to find his way in this realm and to unravel the mass of literature on the subject and that may be its chief value. The less dedicated reader will without doubt find the chapter readable and informative. At times the writers' own opinions intrude themselves but never without justification. A certain piquancy of phrase will be relished by many readers. For instance, in the discussion on scrapie there is the sentence "the vacuoles in the neurons cannot possibly be 'empty holes' and concentrated effort to elucidate the contents of the vacuoles might be profitable."

The third chapter of 39 pages with 5 pages of references by Axel Thomsen, of the State Serum Laboratory, Copenhagen, describes the progress in eradication of bovine brucellosis in Scandinavia. Details are given of the position as it applies in Denmark, Finland, Norway and Sweden. This is followed by a survey of the diagnostic methods available and then vaccination against brucellosis is discussed. The chapter ends with a section of conclusions, the opening sentence reading, "after a bloody campaign against bovine brucellosis, Norway, Finland and Sweden are now completely rid of it; Denmark still has a number of infected herds; the rate is less than 0·5 per cent. in contrast with the original herd infection rate, 25 per cent. in 1944." This chapter will be of intense interest to those who look to the day when steps may be taken to eradicate bovine brucellosis from Britain, and will be a stimulus to those who are fearful of the difficulties.

Chapter 4 by Gerard Renoux, of the Pasteur Institute, Tunis, is concerned with brucellosis in goats and sheep—it extends to 28 pages with 4 pages of references.

The next chapter on swine brucellosis is by H. S. Cameron, of the University of California, and contains 10 pages with 1 page of references.

Chapter 6 by Hugh McL. Gordon, of the McMaster Laboratory in Australia, is on the subject of helminth disease. This is a stimulating, thought-provoking, chapter of 49 pages with nearly 16 pages of references. In the introduction a distinction is drawn between

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A Heat Intolerance Syndrome.—*Concluded.*

improvement in the affected animals. Moreover, the oral administration of Protamone (containing 1 per cent. thyroxine on assay) aggravated the symptoms in the affected animals and potassium iodide treatment was without any effect. Further work on this condition is in progress.

Acknowledgments. Thanks are due to Mr. S. M. Sarwar, M.R.C.V.S., Director, Animal Husbandry Department, West Pakistan, Lahore, and to the staff of the Allah Dad Cattle-breeding Farm, for providing facilities to undertake this work. To Messrs. Cerophyl Laboratories, Kansas City, and Lederle Laboratories, New York, U.S.A., the senior author (M.M.) is indebted for the gifts of protamone and thiouracil respectively. Thanks are also due to Mr. S. M. Ali, for statistical analysis of the data.

Reference

MINETT, F. C. (1949). "Panting in Cattle. I. Observations and Pathology." *Amer. J. Vet. Res.* **10**. 40–48.

helminthiasis and helminthosis. There are sections on epizootiology, life cycles, pathogenesis and nature of helminthosis, immunity, control and techniques. The chapter ends with a section entitled "Looking Ahead." This section contains the interesting sentence "as land use by grazing animals becomes more intensive, management must become more elaborate."

In a chapter of 40 pages, with 3 pages of references, L. Meyer Jones, of the Iowa State College, surveys the position in regard to antinematodal drugs. As might be expected the piperazine compounds are examined in some detail, their clinical uses being considered in relation to each species. There is no mention of the use of piperazine compounds in nematodiriasis; this may be a deliberate omission indicating its lack of efficacy. Perhaps some readers will find this chapter a little disappointing.

Chapter 8 on Artificial Insemination of Cattle with Special Reference to Fertility and Disease Control is from the pen of M. Vandeplassche, of the State University, Ghent, Belgium; the text covers 47 pages and there are 17 pages of references.

The final chapter by L. D-S. Smith, of the Montana State College, surveys the field of Clostridial Diseases of Animals in 55 pages followed by 8 pages of references. The section on enterotoxaemia is of considerable interest, and there is a volume of useful information tucked into this chapter.

In addition to a subject index which stands up to fully adequate tests, there is an author index which enables the reader to trace the appropriate text reference and also the reference itself in the corresponding list of references.

Senior students will undoubtedly find this volume a useful addition to the material available in libraries to supplement their reading. Teachers and research workers will find the volume useful not only for its, on the whole, authoritative survey but also for the lengthy lists of references and the system of indexing them. Probably any veterinary graduate will find it profitable to browse through this volume.

A Student's Histology. H. S. D. GARVEN. E. & S. Livingstone, Ltd., Edinburgh and London. 55s.

This new text-book of histology has its material divided over the conventional organ groupings and disposed over 13 chapters. When it is stated, however, that the book has 650 pages it becomes obvious that each tissue receives very full treatment. Each chapter is sub-divided into an orderly arrangement of paragraphs and sub-paragraphs which should facilitate study and also serve to aid the memory of those who must yet meet the hurdle of examinations. This excellent layout of the text is illustrated by an extremely fine array of line drawings, 3-dimensional figures, and diagrammatic representations of sections stained in different ways.

The points mentioned above can be noticed in many text-books of histology but Dr. Garven's book has a number of other features which will place it very high when the inevitable comparisons are made. The author pays very great attention to dimensions and magnifications and after illustration and discussion in the first chapter this point of size is kept very much to the fore throughout the book. The coloured illustrations which demonstrate the several components of each tissue are extremely fine and illustrate most vividly the use of different stains. Dr. Garven provides 2 appendices for those who may wish to carry their studies further; the first appendix gives suggestions for further reading since references have been purposely omitted from the body of the book, and the second appendix gives short biographical details of histologists and others whose names flavour the science and art of histology.

This book can be thoroughly recommended for it will inevitably take its place as a standard text-book for students of histology. Dr. Garven and his publishers deserve congratulations on producing such a fine book; no doubt the price asked is needed to cover the fine paper and many coloured illustrations. The index covers 25 pages, the print is clear and easy to read, and the binding is very adequate.

The Principles of Therapeutics. J. H. BURN. Blackwell Scientific Publications, Oxford. 27s. 6d.

Professor Burn has written this book for those interested in the pharmacology of therapeutics, a study which is now quickly replacing the subject which was known for so long as Materia Medica. It is probable that most readers will consider the book as a dissertation on some aspects of recent developments in pharmacology.

The book contains 23 chapters. The first two chapters are introductory, the first discussing the development of therapeutics from witchcraft towards a more scientific usage of pure synthetic drugs, and the second, the fundamental problems of ion exchange and active substances at the cell level. The next 10 chapters range over those well-known pharmacological hunting-grounds of acetylcholine, sympathomimetic amines, histamine, hydroxytryptamine and their various antagonisers. Professor Burn deals with these topics by illustrating the development of our present knowledge through the historic method and often by experimental investigations carried out at Oxford. Adrenaline and the sympathomimetic amines receive the longest treatment.

The remainder of the book covers in short chapters such topics as biological standardisation, biological variation and clinical trials, the products of the endocrine glands like pituitary (posterior lobe) extract, thyroid, insulin, vestrogens and androgens and adrenal cortex hormones. In addition analgesics, anaesthetics, disinfectants, chemotherapeutic substances, metallic salts and vitamins receive brief mention.

This is a very readable book and should appeal to anyone who may require to probe into the pharmacological basis of treatment. Most chapters have a short list of references which will lead the reader more deeply into the subject if this should be required. An extensive index allows of easy access to the contents of the book; a long author index, mainly of English workers, shows the very active state of pharmacological studies in this country.

News and Comment

THE LABORATORY ANIMALS BUREAU

We are asked to make it known that the Bureau has been renamed The Laboratory Animals Centre. Its address is M.R.C. Laboratories, Woodmansterne Road, Carshalton, Surrey.

Under its auspices a symposium on The Organisation and Administration of an Animal Division will be held at The Royal Society of Medicine, 1, Wimpole Street, London, W.1, on May 5th, under the chairmanship of Sir Charles Harington, SC.D., F.R.S., Director, National Institute for Medical Research, London.

The following papers will be read:—

"Economics and Efficiency in an Animal Division," Professor Esther M. Killick, Department of Physiology, Royal Free Hospital School of Medicine, London; "The Relation of an Animal Division to a Research Establishment," Dr. S. Koopmans, Rijks Instituut voor de Volksgezondheid, Utrecht; "Economics of an Animal Division: The Problems of Equating Supply and Demand," Dr. J. B. Brooksby, Research Institute (Animal Virus Diseases), Pirbright; "The Economics of Animal Breeding Units," Mr. A. L. Bacharach, Dr. W. F. J. Cuthbertson, and Mr. G. Flynn, Glaxo Laboratories Ltd., Greenford; "The Cost of Animals Bred and Kept for Research: A Comparison of a Large and a Small Animal Unit," Dr. J. S. Paterson, Ministry of Supply Establishment, Porton, and Dr. B. Weitz, the Lister Institute of Preventive Medicine, Elstree; "Argonne National Laboratory Animal Facilities," Dr. Robert J. Flynn, Division of Biological and Medicial Research, Argonne National Laboratory, U.S.A.; "Laboratory Animal Care—A New Discipline," Dr. Bennett J. Cohen, Office of Animal Care, University of California, and Dr. L. R. Christensen, Director, Berg Institute, New York University; "The Organisation of the Field Laboratories at Sheffield University," Dr. S. R. Elsden, Mr. O. Illman, and Professor D. H. Smyth, Department of Physiology, University of Sheffield; "Scientific Research within a Laboratory Animals Division," Dr. C. R. Austin, Division of Experimental Biology, National Institute for Medical Research, London; "The Staffing of an Animal Division," Mr. M. Sabourdy, Directeur, Centre de Sélection des Animaux de Laboratoire, C.N.R.S., France; "Animal Technician Training," Dr. W. Lane-Petter, Director, Laboratory Animals Centre, Carshalton, and Dr. Mary F. Lockett, Chelsea Polytechnic, London.

This Symposium is open, without invitation, to scientific, medical, and veterinary graduates, for whom it is primarily intended, and to senior animal technicians.

VETERINARY RADIOGRAPHY

Members of the profession are invited to a two-day course in The Fundamentals of Radiography in Veterinary Work, which will be held on May 8th and 9th at the Ilford department of radiography and medical photography, Tavistock House North, Tavistock Square, London, W.C.1. The lectures will include such subjects as the construction and types of X-ray materials, technique of development and other processes, intensifying screens, the use of contrast media, etc. A number of practical demonstrations will be given. Further particulars are available from Messrs. Ilford Ltd. at the address given above.

THE B.S.A.V.A. FIRST ANNUAL CONGRESS

As previously announced in our columns, the first annual congress of the British Small-Animals Veterinary Association was held last Friday, Saturday, and Sunday in London at the Shaftesbury Hotel. It was entirely successful, and indeed the attendance well exceeded the most optimistic hopes of the organisers. A considerable number of papers were read and discussed, and it is understood that the B.S.A.V.A. will publish the full Proceedings in its own bulletin in due course. We hope to publish a broad review of this congress in an early issue of THE VETERINARY RECORD.

VETERINARY SURGEONS' CAR PARKING

The following letter has been addressed to the B.V.A. by the Assistant Commissioner of Metropolitan Police. It may be of use to members having regard to the ever-growing difficulty of parking cars in urban areas.

"I am directed by the Commissioner to say that the police have no power to permit parking anywhere on the highway except at places expressly designated for the purpose by the Ministry of Transport and Civil Aviation, and that, in enforcing the law relating to the use of the highway, it would not be proper for the police to discriminate in favour of any particular class of road users.

"The Commissioner regrets, therefore, that it is not possible to accord any special facilities to veterinary surgeons in the matter of parking, but in cases of real difficulty or urgency the police do their best to assist when their advice is sought as to where a car should be left.

"The Removal of Vehicles (England and Wales) Regulations, 1957, confer on the police the power to remove from streets vehicles left in positions where a statutory prohibition or restriction is contravened, or danger is likely to be caused to other road users, or serious obstruction is actually being caused. Before exercising this power, the police normally look for the person in charge of the vehicle, and this is made easier if a notice is displayed indicating where he can be found. It must be stressed, however, that if the vehicle is left in an especially dangerous or obstructive position, the police may be obliged to remove it without waiting for the driver to be traced."

ABNORMALITIES IN CARCASES

Of the 413,815 animals slaughtered at Stanley (Liverpool) abattoir last year, 73,835 (about 17 per cent.) showed abnormal conditions. Carcases totally

rejected as unfit for human consumption numbered 1,477, and portions of 5,551 other carcases were condemned. The weight of meat involved was 264 tons.

CARIBBEAN V.A. CONVENTION

Mr. Gordon Knight, who is attending this Convention, by invitation, to demonstrate small-animal surgical techniques, has consented to be the official delegate for the B.V.A. Mr. G. N. Gould, President, will represent the Royal College. The Convention will be held in Trinidad from May 26th to 31st.

At the request of the British Council Mr. Gould will combine this visit with a lecture tour covering Jamaica, British Guiana, and Barbados, and he has been specially asked by Venezuela to extend his tour to that country as well. He will lecture on veterinary science, and throughout the tour will visit veterinary establishments and be available for discussion both with government authorities and with his professional colleagues.

THE CENTRAL VETERINARY SOCIETY

Visitors are invited to an all-day meeting of the Central Veterinary Society, to be held at the Royal Veterinary College, by kind permission of the Principal, on April 17th. The President, Dr. E. Cotchin, will take the chair at 11 a.m. The subject "Design and Equipment in the Veterinary Surgery" will be discussed in a series of papers, and should prove of particular interest to veterinary surgeons in private practice.

THE NUTRITION SOCIETY

The Scottish Group of the Nutrition Society is holding a symposium on "Nutrition and Climatic Stress" at the Hannah Dairy Research Institute, Kirkhill, Ayr, on April 26th. Papers will be read on both human and animal nutrition. Those interested who are not already members of the Nutrition Society are invited to write for further particulars to Dr. J. Davidson, The Rowett Research Institute, Bucksburn, Aberdeenshire.

UNIVERSITY NEWS

Bristol

The following students passed the second examination for the degree of B.V.Sc. (Sections I and II):—

Anstey, Miss J. M.; Blake, K. J.; Burrows, C. J.; Davies, H. E.; Edwards, H. G.; George, D. B. I.; Hughes, Miss T. P. M.; Peace, M. D.; Perry, M. D.; Sanders, K. J.; White, K. B.

The following students passed in the subjects indicated (A = Anatomy, P = Physiology, AH = Animal Husbandry I):—

Farman, R. S. (A, AH); Gill, G. P. (P); Gregory, M. W. (A, P); Herbert, M. D. (A, P); Morris, J. M. (A, AH); Mucklow, Miss P. E. M. (A, AH); Sebesteny, A. (A, P); Stoker, J. W. (A, AH); Whittard, L. M. (A); Wilkinson, K. R. (A, P); Young, R. C. (A).

The following students passed the final examination for the degree of B.V.Sc. (Section I):—

Chapman, R. H.; Collins, G. H.; Cook, B.; Cushing, P. M.; Davies, T. H. R.; Dewdney, Miss J. M.; Gale, R. M.; Hoddinott, P. Q.; Hughes, W. A.; Jowett, G. D.; Juby, W. D.; King, L. M.; Reed, J. R.; Rendall, G. F.; Roberts, C. F.; Sharpe, Miss H. B. A.; Smith, M. S.; Swan, B. A. K.; Watts, M. E. T.; Westaway, A. J.; Winkler, C. E.; Yarrow, T. G.

FIFTY YEARS AGO

Fees and Charges

A leading article included the following:—

The members of the North of Ireland V.M.A. are initiating an attempt to arrive at a uniformity of fees for tuberculin testing in their part of the country. Not very much can be said of the matter at present, as all that is definitely settled is that the attempt should be made, and that, as a first step, the officers of the Society shall draw up a provisional scale of fees for discussion by the members. We may note, however, two hopeful signs—in the first place, no scale of fees is to be fixed hastily, and secondly, the originators of the movement evidently fully realize that they are undertaking a task of considerable difficulty. It will be both interesting and instructive to watch the result.

It certainly seems that the fees for some special veterinary services might be made much more uniform than is now the case. The examination of horses for soundness is one of these services, and testing with tuberculin is another. It will be very difficult to establish even an approximate scale of fees for either, but the endeavour to do this is well worth making, and we in England shall follow this Irish movement with interest.

If the North of Ireland V.M.A. succeed in formulating a scale of fees which proves workable, there is no reason why the same thing should not be done in England. Indeed, this particular question of the fees for tuberculin testing might well be brought before some at least of our English Associations at any time. It would be less difficult to fix upon a minimum scale of fees for a comparatively small locality than to establish one throughout the kingdom.

CATS BLAMED FOR AN ILLNESS IN HUMANS

This has been a bad month for household pets. The other week Glasgow research workers reported a fatal case of poliomyelitis in a child in which there was strong circumstantial evidence that a budgerigar had been responsible for giving the infection. The *Proceedings of the Royal Society of Medicine* now report that there are grounds for believing that cats may be responsible for the serious form of neuritis known as infective polyneuritis.

The author of the paper in question reports that he has seen six cases in which the onset of the disease was directly related to an illness of the patient's cat, and he has heard of five other cases.

The most interesting of these concerned a farm labourer who developed the disease. While he was ill his cat was sent to be looked after by a woman who lived 40 miles away. A month later the cat sickened and died of the condition known as feline

enteritis, and the woman was admitted to hospital with infective polyneuritis and died 10 days later.

Feline enteritis is a virus disease of cats which is highly infectious from animal to animal, and probably 70 per cent. of all cats are infected at one time or another. It has a mortality rate of about 20 per cent. Tests carried out with the virus of feline enteritis show a distinct difference in the reaction of blood of patients with infective polyneuritis and the blood of healthy people, which suggests that there may well be some association between this common disease of cats and this particular form of polyneuritis in human beings.

[*The Times, March 31st.*]

PRESENTATION TO NEW REGIONAL V.O.

Mr. H. M. M. Duff, superintendent veterinary officer for the Ministry of Agriculture in Brecon, Denbighshire, Flintshire, Montgomeryshire, and Radnorshire, who has been appointed one of the two regional veterinary officers for the newly-created West Midlands region, received last week a farewell gift from his colleagues in Wales. It took the form of an inscribed silver cigarette box, and, for his wife, a silver pen tray.

PERSONAL

Dr. A. McDiarmid, of the A.R.C. Field Station at Compton, was elected a Fellow of the Royal Society of Edinburgh on March 3rd.

Engagement

WATKINS—HURCOMB.—The engagement is announced between David Brian Watkins, B.V.M.S., M.R.C.V.S., only son of Mr. and Mrs. A. O. Watkins, Cherry Garth, Greenhill Road, Griffithstown, Mon., and Diana Kathleen Hurcomb, only daughter of Mr. and Mrs. A. L. Hurcomb, Fairholme, Roman Road, Three Elms, Hereford.

Births

STEVENS.—On March 28th at White House, Sawston, Cambridge, to Pat, wife of A. J. Stevens, a daughter, Carol Anne.

R.C.V.S. OBITUARY

We record with regret the deaths of the following members of the profession:—

HEWER, John Radbourn, O.B.E., M.R.C.V.S., Forest Cottage, London Road, Marlborough, Wiltshire. Graduated July 14th, 1905. Died March 26th, 1958, aged 74 years.

TAYLOR, Walter, D.V.H., I.V.S. (Retd.), c/o Standard Bank of South Africa, Adderley Street, Cape Town, South Africa. Qualified December 19th, 1910, at the Veterinary School of the University of Liverpool. Died December 30th, 1957.

COMING EVENTS

April

9th (Wed.). Meeting of the Sussex Veterinary Society at the Old Ship Hotel, Brighton, 2.30 p.m.

Annual General Meeting of the Lakeland Veterinary Association at the Rainbow Hotel, Kendal, 6 p.m.

10th (Thurs.). Council Meeting of the Society of Practising Veterinary Surgeons at the North British Hotel, Edinburgh, 5.30 p.m.

11th (Fri.). Dinner and Dance of the West of Scotland Division in St. Enoch's Hotel, Glasgow, 7.30 p.m.

Special Meeting of the Welsh Branch at Belle Vue Hotel, Aberystwyth, at 2.15 p.m.

12th (Sat.). 12th Annual Dinner of the B.R.X. Club at the Royal Veterinary College, 6 p.m.

16th (Wed.). Combined Meeting of the Royal Society of Medicine, Section of Comparative Medicine, and the Section of Pathology at the Society's House, 5 p.m.

17th (Thurs.). All-day Meeting of the Central Veterinary Society at the Royal Veterinary College, Camden Town, 11 a.m.

23rd (Wed.). Meeting of the Lincolnshire and District Division at the Campbell Hotel, Peterborough, 2.30 p.m.

25th (Fri.). General Meeting of the Mid-West Veterinary Association at the Berkeley Café, Clifton, Bristol, 2.30 p.m.

General Meeting of the Yorkshire Veterinary Society in York, commencing in the Attested Ring at York Market, 2.30 p.m., and continuing in the City Arms Hotel, Fawcett Street.

26th (Sat.). Annual General Meeting of the Association of State Veterinary Officers in the auditorium of the Wellcome Research Institute, 183-193, Euston Road, London, N.W.1, 4 p.m., followed by the Annual Dinner at the Café Royal, 6.30 p.m.

May

1st (Thurs.). Annual General Meeting of the Central Veterinary Society.

10th and 11th (Sat. and Sun.). 6th Annual Reunion of the R.V.C. '52 Club at Ye Miller of Mansfield, Goring-on-Thames.

BRITISH VETERINARY ASSOCIATION QUARTERLY MEETINGS IN EDINBURGH

Wednesday, April 9th—Royal (Dick) School of Veterinary Studies

10.15 a.m. Small-Animals Committee.
2.15 p.m. Home Appointments Committee.
3.45 p.m. Farm Livestock Committee.

Thursday, April 10th—Royal (Dick) School of Veterinary Studies

9.30 a.m. Finance Sub-committee.
10.00 a.m. Veterinary State Medicine Committee. Committee.

11.30 a.m. Parliamentary and Public Relations Committee.

2.30 p.m. General Purposes and Finance Committee.

Friday, April 11th—Royal (Dick) School of Veterinary Studies

10.15 a.m. Council Meeting.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Dunbarton. Westerhill Farm, Cardross (Mar. 22).
Hants. Manor Farm, Plaitford, Romsey (Mar. 25).
Lanarks. North Hillhead Farm, Carluke (Mar. 29).
Lancs. Peel Hill Farm, Peel, Westby with Plumpton, Preston (Mar. 25).
Norfolk. Hall Farm Buildings, Ketteringham Lane, Hethersett, Norwich (Mar. 26).
Sussex. Hazelhurst Farm, Ticehurst, Wadhurst (Mar. 25).
Westmorland. Leighton Deck, Beetham, Milnthorpe (Mar. 27).
Yorks. Mount Airey Farm, South Cave, Brough (Mar. 24); Davy Hill Farm, Cowling, Keighley (Mar. 25)..

Foot-and-mouth Disease

Kent. Each Manor Farm, Ash, Canterbury (Mar. 30).

Fowl Pest

Essex. Stebbing Fold Farm, Dunmow (Mar. 22).
Hants. Canada Common, West Wellow, Romsey (Mar. 26).
Herts. Ayot, Old Meads Road, Elsenham, Bishop's Stortford (Mar. 26); 19, Eastfield, Royston (Mar. 28).
Hunts. Sunnyside, High Street, Fenstanton (Mar. 29).
Lancs. Carr House Lane, Bretherton, Preston (Mar. 22); Wyre View, St. Michaels-on-Wyre (Mar. 24); Rose Farm, Freckleton, Preston (Mar. 26).
Norfolk. The Bungalow, Little Dunham, King's Lynn (Mar. 21).
Sussex. Stukles Farm, Maynards Green, Horam; Glebe Sanctuary Field, Horam (Mar. 21); Oakhurst Farm, Horam (Mar. 29).
Yorks. Allotments, Hollin Royd Road, Dewsbury (Mar. 21); 114, Oldbank Road, Dewsbury (Mar. 25).

Swine Fever

Anglesey. North Lodge, Llanfair P.G. (Mar. 28).
Beds. Tring Road, Dunstable (Mar. 21); Blythe Farm, Gamlingay, Sandy (Mar. 24); 66, Totternhow Road, Eaton Bray, Dunstable (Mar. 26); 158, Hitchin Road, Arlesey (Mar. 28).
Bucks. Woodend Farm Ltd., Medmenham, Marlow (Mar. 24).
Dorset. Stables Farm, Bradford Peverell, Dorchester (Mar. 24); Minshull, Victoria Road, Ferndown, Wimborne (Mar. 26).
Kent. 2, Crowe Hill, Downe, Farnborough (Mar. 24).
Lancs. Crantum East Farm, New Cut Lane, Halsall, Ormskirk (Mar. 25).
Leics. Church Farm, Croft (Mar. 21).
Lincs. Aisby Farm, Corringham, Gainsborough (Mar. 24).
Middx. Ashby Farm, Duckshill Road, Northwood (Mar. 21).
Northants. The New Bungalow, Lower End, Hartwell (Mar. 21); 12, Stockwell Road, Milton; Piggery, Milton Allotments, Milton; Piggeries, St. James's Allotments, Weedon Road, Duston (Mar. 24); Breeze Hill Farm, Wootton (Mar. 27).
Somerset. Rose Vale, Washford, Watchet (Mar. 21).
Staffs. School Farm, Birch Lane, Pelsall, Walsall (Mar. 26).
Suffolk. Tothill Meadow, Tothill, Stowmarket (Mar. 24); Red House Farm, Bucklesham, Ipswich (Mar. 27).
Surrey. Linden Farm, Selsdon Vale, Selsdon, South Croydon (Mar. 24).
Sussex. Upper Wilting Farm, Crowhurst, Battle (Mar. 21); Meadow Road Piggeries, Worthing (Mar. 26); 204, Harrow Lane, St. Leonards-on-Sea (Mar. 28).
Warwicks. Hole House Farm, Lapworth, Solihull (Mar. 24); Old Mill House Farm, Moreton Pinkney, Rugby (Mar. 26).
Yorks. East View Farm, Clayton Heights, Bradford (Mar. 24); Old Hall Piggeries and Devonshire House, Bradley, Keighley (Mar. 27).

IN PARLIAMENT

Foot-and-mouth Disease

MR. HURD asked the Minister of Agriculture, Fisheries and Food what representations have now been made to Argentina pressing for more effective precautions to prevent foot-and-mouth disease reaching Great Britain in chilled and frozen meat; and if more satisfactory undertakings for the future have now been given.

MR. JOHN HARE: I am glad to have this opportunity of assuring my hon. Friend that the remarks I made in the House on March 5th have been drawn to the attention of the Argentine Government. I made it clear then what very great importance I attach to this matter, and I am sure that the Argentine Government are as anxious as we are ourselves to maintain steady progress toward the effective control of the disease. Through my veterinary officers stationed in Buenos Aires, we are in constant touch with the Argentine authorities on precautions designed to prevent infected carcases reaching Great Britain.

MR. HURD: Will my right hon. Friend take note that the action which has at last been taken will be very warmly and widely welcomed, and will he keep the House informed of the progress he is able to make in seeing that these precautions against bringing in foot-and-mouth disease through South American meat are made more effective with the co-operation of the Argentine authorities?

MR. HARE: I am grateful to my hon. Friend. I place great importance on this matter, and I will certainly keep the House informed.

Sheep (Foot-rot)

MR. CHAMPION asked the Minister of Agriculture, Fisheries and Food if he will obtain information from the Victoria State Government upon the working of their Act of 1956, dealing with the control and treatment of foot-rot in sheep, with a view to the possible introduction of a similar measure for England and Wales.

MR. GODBER: My right hon. Friend is aware of the legislation in force in Victoria, and of the action taken under it. Control methods in Australia are similar to our own; but, as the hon. Member will have understood from the reply given to him on March 13th, my right hon. Friend does not consider that legislative action is necessary in this country.

Letters to the Editor

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

William Moorcroft, 1767-1825

Sir,—On November 16th, 1957, you were kind enough to publish substantial extracts from my inaugural lecture "Man and his Animals" which was given in the University of Liverpool on October 17th, 1957. Mr. J. W. Barber-Lomax, M.A., B.V.SC., M.R.C.V.S., of the Wellcome Foundation, has been in correspondence with me about the remarks I made in that lecture on William Moorcroft, and he has drawn my attention to some inaccuracies which might be misleading to those who are interested in the life of that remarkable man.

I drew my information from Sir Frederick Smith's "The Early History of Veterinary Literature," Vol. III, pp. 3-7, and inadvertently I gave the impression that Moorcroft's investigation of an outbreak of cattle plague took place at Ormskirk. Smith does not in fact state where the outbreak occurred, although he does write that Moorcroft was born probably in Ormskirk. Mr. Barber-Lomax informs me that he has traced the registration of the birth of a William Moorcroft in 1767 to Lathom, a country district of the parish of Ormskirk.

The second point is that Moorcroft joined the Veterinary School at Lyons in March, 1790, and left exactly a year later, so that he left Lyons in 1791, not 1790 as I stated in my lecture.

I am very grateful to Mr. Barber-Lomax for drawing my attention to these points, and I would appreciate the opportunity to correct them in your columns.

Yours faithfully,
D. L. HUGHES.

The University of Liverpool,
Department of Veterinary Pathology,
42-44, Bedford Street North,
Liverpool, 7.
March 31st, 1957.

Infection of Calves

Sir,—The following case is of passing and speculative interest.

Two days after calving, a cow had to be slaughtered because of per-acute mastitis. The live heifer calf born on the Thursday was reported to be ill on the following Monday; no specific diagnosis was made and an antibiotic was injected, followed by sulphonamide therapy. The owner reported on the subsequent Friday that the calf had developed a mastitis.

I visited the 8-day-old calf and found a swelling about the size of a grapefruit beneath the four small teats, two "potential quarters" being obviously more affected than the others.

It is extremely unlikely that the calf ever suckled its mother. This is one case when very early infection of the mammary tissue of a heifer calf can be established with certainty.

It is interesting to speculate whether in many cases of acute mastitis of the kind so often associated with parturition, infection is transmitted to the calf *in utero* or *per os*, thus becoming a source of trouble for later life.

Yours faithfully,
P. W. FRANKS.

6, Khartoum Villas,
Ardleigh,
Essex.
March 30th, 1958.

Anaesthetising a Parrot

Sir,—I am afraid that THE RECORD takes some time to get here and I hope I am not too late with this letter for publication.

I was most interested in the article appearing in your last issue to arrive here, on the subject of giving anaesthetics to birds, and wish to have the following recorded.

Some months ago, I had a Jamaican parrot brought to me with a broken leg. The bird was extremely difficult to handle and it was decided to give an anaesthetic. Since I graduated, my wife has always given my volatile anaesthetics—some five thousand times—and successfully. I found at the last moment that we were out of ether and decided in fear and trembling to use chloroform, not informing Mrs. Geffen of the attendant dangers. Using a Wright's mask (cat pattern) and a wad of cotton wool soaked with chloroform, she rapidly had the bird satisfactorily anaesthetised. I set the leg in gypsona. A few minutes later, a rather surprised looking parrot sat up on the table and swore. At the end of ten days the bird was brought back for the plaster to be removed. This was done without anaesthetic.

I am happy to report that the leg had healed satisfactorily. We have seen the bird several times since, riding on the owner's shoulder in his car, apparently none the worse for its experience.

Yours faithfully,
L. R. GEFFEN.

Kelroche,
99, Hope Road,
Liguanea P.O.,
Jamaica,
B.W.I.
March 1st, 1958.